

10/511150

Application No.: Not Yet Assigned

Docket No.: 2360-0421PUS1

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AMENDMENTS TO THE CLAIMS

CLAIMS 1-9 (CANCELLED)

10. (NEW) Ophthalmological examination and/or treatment station for a human patient's eye (301) with an optical measuring arrangement (312, 311, 309, 131) and an evaluation unit (317) connected to the latter in signalling terms,

having a modular configuration,

said modular configuration having

a patient module (303),

an illuminating device (305),

a first optical fibre (304),

an observation device (325a/b, 326a/b, 315, 322, 323) and

a second optical fibre (309),

said patient module (303) being positioned directly in front of the human patient's eye (301) and being arranged remote from the evaluation unit (317),

said illuminating device (305) being likewise arranged remote from said patient module (303),

said patient module (303) being connected detachably by said first optical fibre (309) with said illuminating device (305),

said patient module (303) having at least one first fibre coupler part,

said first optical fibre (309) having a first counterpart adapted to the at least one first fibre coupler part for said detachable connection between the patient module (303) and the illuminating device (305),

said illuminating device (305) producing a first radiation conductable with said first optical fibre (304),

the patient module (303) having a first collimator (310a) interacting with the first optical fibre (304) for converting said first radiation into a first free-space beam (307),

said observation device (325a/b, 326a/b, 315, 322, 323) being arranged in the patient module (303) and preferably being connected detachably to the evaluation unit (317),

said optical measuring device (312, 311, 309, 313) having at least one second optical fibre (309) guiding a second radiation,

said patient module (303) having a second collimator (310b)

said second collimator (310b) converting said second radiation of said second optical fibre (309) into a second free-space beam (312),

said patient module (303) having at least one second fibre coupler part (311) and said second optical fibre having a second counterpart adapted to the at least one second coupler part for doing a detachable connection to said second collimator (310b).

11. (NEW) Examination and/or treatment station according to claim 10, having a display element (315) being arranged on the patient module (303) and

having a detachable electrical signal line (316) for a detachable connection between the display element (315) and the evaluation unit (317).

12. (NEW) Examination and/or treatment station according to claim 10, wherein the observation device (325a/b, 326a/b, 315, 322, 323) is designed with an eyepiece (323) arranged in the patient module (303) and with an objective lens (322) for eye examination.

13. (NEW) Examination and/or treatment station according to claim 10,
wherein the observation device (325a/b, 326a/b, 315, 322, 323) has an image detecting element (CCD) (326a/b) and an optical unit (325a/b),

said optical unit (325a/b) projecting an area of the eye to be examined onto said image detecting element (326a/b),

the image detecting element (326a/b) and optical unit (325a/b) being arranged in the patient module (303).

14. (NEW) Examination and/or treatment station according to claim 10, having a holding device (333) for the patient module (303).

15. (NEW) Examination and/or treatment station according to claim 10, wherein said evaluation unit (317) being made computer-assisted for an evaluation or measurement of first data and

said station having data memories containing second retrievable data,

said optical measuring arrangement (312, 311, 309, 131) or said observation device (325a/b, 326a/b, 315, 322, 323) being connected to said evaluation unit (317) for evaluating measuring data,

said station having a data network for connecting said evaluation unit (317) with said data memories, whereby

said evaluation unit being able processing said first and said second data.

16. (NEW) Examination and/or treatment station according to claim 10, wherein

said optical measuring arrangement (312, 311, 309, 131) being an optical arrangement of

a Michelson interferometer type,

said optical measuring arrangement (312, 311, 309, 131) having a radiation source (9; 73; 92; 149; 191a-e) emitting said second radiation,

said second radiation being a short-coherent radiation,

said optical measuring arrangement (312, 311, 309, 131) being essentially a fibre-optical arrangement,

said optical measuring arrangement (312, 311, 309, 131) having a measuring branch (7; 72; 92; 157b),

said measuring branch having said second optical fibre (309),

said second optical fibre (309) transmitting a first part of said short-coherent radiation (second radiation),

said measuring branch having said second collimator (310b),

said first part of said short-coherent radiation (second radiation) being converted by said second collimator into said second free-space beam,

said free-space beam being directed at the human patient's eye as an optically transparent and/or diffusive reflecting object (1, 1', 1''; 147; 205),

said optical measuring arrangement (312, 311, 309, 131) having a reference branch (5; 67; 86a, 86b; 157a),

said reference branch transmitting a second part of radiation of said short-coherent radiation,

said reference branch having a path length variation unit (39; 55; 61; 71; 89; 161v) for modifying a transit time of said second part of radiation in said reference branch;

said reference branch having two reflectors,

said reflectors dividing said second part of radiation in a third and in a forth part, whereby said forth part getting a first optical path length being different to a second optical path length to said third part,

said measuring branch having a measuring-branch-optical-fibre,

said measuring-branch-optical-fibre being disconnectable by fibre coupling devices.

17. (NEW) Examination and/or treatment station according to claim 16 wherein said reference branch having at least two reflectors (31a, 31b; 49, 50; 57a, 57b; 87a, 87b; 161a-c; 161a-d),

said at least two reflectors are being retroreflectors.

18. (NEW) Examination and/or treatment station according to claim 16, wherein said optical measuring arrangement (312, 311, 309, 131) having an optical element (35; 61) in said reference branch (5), which element covers the reflectors (31a, 31b; 57a, 57b) in succession with said second radiation.

19. (NEW) Examination and/or treatment station according to claim 13, wherein said image detecting element (326a/b) and said optical unit (325a/b) are formed in a pair and the pair parts are arranged at a distance from one another in order to permit stereoscopic observation.

20. (NEW) Examination and/or treatment station according to claim 14, wherein said holding device (333) being designed as an aligning device for positioning in front of the human patient's eye (301).

21. (NEW) Examination and/or treatment station according to claim 10, wherein
said patient module (303) having a geometric design in the order of size of a contact lens
in order to take up only a small area of space in front of the patient.

22. (NEW) Examination and/or treatment station according to claim 10, wherein
said patient module (303) takes place only of just one apparatus but by its integration into
said modular configuration achieving a functionality of a number of different individual
apparatus.

23. (NEW) Examination and/or treatment station according to claim 17, wherein
said at least two reflectors being offset in said reference branch at a different depth.

24. (NEW) Examination and/or treatment station according to claim 17, wherein
said at least two reflectors being offset in said reference branch at a different depth and
being movable with one another for generating together a transit time modification and transit
time difference.